

A. Cover Sheet

☐ agricultural project

☒ individual project

☒ urban project

☐ joint application

Proposal title – concise but descriptive: **Landscape Water Budgets on the Web.**

1. Principal applicant – organization or affiliation: **CTSI Corporation**
2. Contact – name, title: **Tom Ash, Director Landscape Conservation Programs**
3. Mailing address: **2722 Walnut Ave, Tustin, Ca. 97280**
4. Telephone: **(714) 669-4303**
5. Fax: **(714) 669-4309**
6. E-mail: **toma@ctsicorp.com**
7. Funds requested- dollar amount: **\$215,750.00**
8. Applicant cost share funds pledged: **Agency contribution level to be determined based upon agency size and number of dedicated irrigation meters. Landscapers contributing in-kind by providing data collection and site measurements.**
9. Duration – (month/year to month/year): **July 2001** to **June 2003**
10. State Assembly and Senate districts and Congressional district(s) where the project is to be conducted: Any water agency, preferably (most cost effective) performed on county by county basis. This project will enable agencies to meet BMP #5.
11. Location and geographic boundaries of the project: **Urban water districts within California.**
12. Name and signature of official representing applicant. By signing below, the applicant declares the following:
 - the truthfulness of all representations in the proposal;
 - the individual signing the form is authorized to submit the application on behalf of the applicant;
 - the applicant will comply with contract terms and conditions in Section 11 of the PSP.

(printed name of applicant)
Tom Ash, CTSI Corporation

(date) **2/14/01**



(signature of applicant)

B. Scope of Work

Relevance and Importance

Executive Summary.

In order to meet the urban Best Management Practice #5 for Large Landscapes, water agencies must assign customers with dedicated landscape meters "Eto-based water use budgets equal to no more than 100% of reference evapotranspiration per square foot of landscape area." Agencies must also "provide notices each billing cycle to accounts with water use budgets showing the relationship between the budget and actual consumption."

There are three agencies that have this capability integrated with their billing system in the state. Their experience shows a significant water savings when customers have a "target" or water budget for water use. Currently, agencies view meeting this BMP requirement as too expensive, complicated, and beyond the abilities of their staff and/or computer equipment. To take the burden off the individual agencies, CTSI has developed a system that gathers the necessary data across Orange County. This system involves landscapers, property managers and public agencies in site data collection. This information is input into the CTSI program database, with the performance of each meter viewable at any time over the Internet. Likewise, water agency staff can view the performance of sites within their service area. As an incentive for landscape contractors to collect site data, "certification" and promotion of the companies is offered (this is the feature that Orange County companies like and the reason they participate in collecting data).

1. Statement of Issues.

It is suspected that as much as 50% of landscape irrigation water is applied unnecessarily (IRWD, Contra Costa). However, without a means to measure site by site water requirements and compare against actual weather and water usage, neither the water agency nor the landscaper can take steps to improve efficiency. Water agency data shows that landscape over-watering is a statewide problem. BMP #5 was created specifically to address inefficient landscape water use.

The knowledge of landscape acreage within an agency provides a more accurate planning tool (current and future water demand estimates), a targeting ability for landscape conservation efforts, and an ability to identify sites that may contribute to water run-off (from over-watering the landscape).

Currently, water agencies can employ a variety of methods to measure landscapes. Most are too expensive or have required consistent on-site verification (Contra Costa). However there is one target participant group that serves the vast majority of large landscape sites, the landscape maintenance contractor. This program utilizes the on-site contractor to measure and return site data.

Different formulas may also be used to calculate site budgets. By using one database and one consistent site budget formula, the governing agencies (CUWCC, USBR, etc.) will be able to compare "like" data statewide.

This proposed method is the only current program creating BMP #5 certification for multiple agencies in the state. Adoption of this approach would standardize the method of meeting

BMP #5. It would also allow smaller agencies to be able to meet BMP #5 objectives, rather than exempting themselves for cost-effectiveness reasons.

This proposed program has already created a framework by which to provide feedback to site managers. This ongoing task as required by BMP #5 is likely a major deterrent to agencies in undertaking any landscape water budget effort. This program uses the most easily accessible method for feedback, the Internet (no mailings, faxing or cost for the site managers to get their site information).

Lastly, this program can integrate with any existing methods of site measurement to complete the BMP #5 requirement of providing reporting and feedback to customers.

3. Nature, Scope and Objectives.

The objective is to provide the landscapers with sufficient motivation to collect the site by site data that water agencies are required to gather to create a site water budget. The information on the Internet will help them better manage the water on their sites. The combination of meeting BMP #5 requirements and providing "performance" incentives (certification), will mean actual water savings can occur (not within the scope of the BMP).

The nature of the program is that it must be a win-win for all participants, the agencies, the landscapers and the site owners. While this is a voluntary program (the BMP has no enforcement provisions), it must be perceived as worthwhile for landscapers to participate. In Orange County, landscapers are starting to compete in the "certification" race created by this program.

The scope of the program is to collect site square footage for all dedicated meters managed by landscapers in a given area/region/state. The scope also covers the input of site data into the program database, calculation of a site water budget (at or below 100% ETo), alignment of the meter information by landscaper, property manager, and agency for multiple reporting and tracking by interested parties. The program also involves meeting with and developing billing cycle water use downloads into the CTSI database so that real time weather is used to calculate water budgets and site performance feedback. The scope concludes with providing anytime password secured Internet access to any and all meter/site information. The example of what is seen on the Internet is shown below:

Meter No.:	1280862	Area:	152460 Sq. Ft.
Acct No.:	65-0240239-01-8	% Turf:	53%
Meter Type:	Dedicated	Microclimate:	Foothill
Site Name:	Long Hills	Grasscycling:	Yes
Agency:	Water Company	Mulch:	Yes
Prop. Mgmt. Co.:	XYZ	Divert/Recycle:	Yes

Meter Dates	Current Use	Rain	Site Budget	% of Budget	Over or under budget (water units)	Cost (dollars)	Over or under cost (dollars)
02/01/1998 - 02/28/1998	43	12.12	25	172%	18	73	31
07/01/1998 - 07/31/1998	213	0.00	217	98%	-4	362	-7
11/01/1998 - 11/30/1998	270	1.34	40	675%	230	458	391
Totals over the course of this program					244		817.8

Technical/Scientific Merit, Feasibility, Monitoring, and Assessment

2. Methods, procedures and facilities.

A. Outreach to target participants: Brochures and promotion of the program would be implemented with local water agencies. CTSI staff can present to large groups (recommended). We will also provide training and materials for participating water agency staff so that they can present to individual landscape and property management companies within their service areas.

B. The program procedures are described to potential participants and site data collection forms (also available on the Internet) are disseminated. Participants are instructed to complete the web-based site data forms. CTSI in turn works with each local agency to establish billing cycle downloads of data for water budget and site performance calculations.

C. Facilities are not required. CTSI can administer this program from its main office in southern California, with an Internet SQL Server (not required for the data load presented in Orange County), with travel around the state for presentations and outreach among agencies and the target audience.

D. The CTSI site budget calculations use an 80% (.8) of ET coefficient for turf grass areas, and a 50% (.5) of ET coefficient for all other areas of the site (trees, shrubs and groundcovers). While the database does have the 100% BMP budget included, this often "allows" irrigators to overuse water on a site of less turf. Therefore, as proposed and used in Orange County, the database uses an actual site budget and actual local ET to calculate how well a site is irrigating. Each site has it's own specific budget based on the area and breakdown of turf percentage on the site. This method exceeds (decreases) the recommended use level of BMP #5. Weather data can be obtained from local weather stations or from CIMIS.

E. This program approach is in its second year of trial in Orange County. The procedures have been streamlined, marketing has become more focused and the data is coming in faster from landscapers as each month goes by. Therefore, this statewide effort is aided by the pilot experience in Orange County. The most difficult area of the entire program turns out to be the ability of water agencies to supply appropriate billing data on a consistent (billing cycle) basis. Therefore, a greater effort must be made in a statewide program to involve the appropriate agency decision-maker. If the program becomes a statewide effort, marketing directly to general managers to assign staff to assist CTSI with data downloads, outreach into the community, etc. is critical to large scale success of the effort.

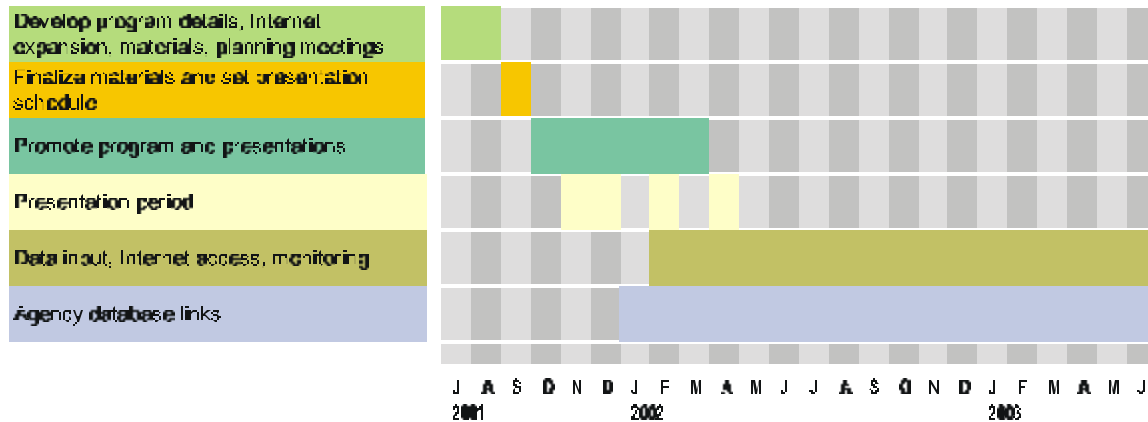
F. Monitoring of program progress can be done directly through the Internet and the program database. The number of meters and the agency location will be available after they are input to the database. Any agency may access data regarding meters in their service area at any time. They will have a total count of meters, acres and a relative "performance" level by single meters or as a group. CTSI, during the program ramp-up period, will provide monthly reports on agency by agency progress, presentation schedule, marketing, etc.

G. Assessment of water use performance will be available by all participants for their meters. Agencies will be able to access and assess on a small or large group level. Assessment of program performance is generally related to the number of meters collected and the ability of participants to access their information. The use of the Internet also applies to assessment by the state project manager(s) for program impact.

3. Schedule.

An estimated schedule is shown below. It can be adjusted as necessary to meet the state objectives. Individual agencies may come into the program at any time. While major presentations are scheduled for fall 2001, presentations can occur throughout the project period, as needed by agencies, landscapers, etc.

Program Timeline



C. Outreach, Community Involvement, Information Transfer

This program targets landscape and property management companies. These businesses serve a wide variety of customers in a community, including low income housing projects, condo associations, small businesses, etc. If water is saved at these sites, water bills are reduced and the small business and the residents benefit economically. If water is saved across the agency, less imported water may need to be purchased and water rates may not need to be raised.

The community involvement increases with the level of marketing, participation of the media, and agencies to coordinate the message and the efforts.

The educational information provided to participating companies will increase the landscape maintenance knowledge of individual workers. It is also expected that monthly Internet updates will provide timely feedback to individual site laborers on the water use/needs of the site. The transfer of timely information and educational materials is the responsibility of the landscape company. CTSI can assist with this responsibility if desired by the state or program managers.

D. Qualifications, Cooperators and Establishment of Partnerships

A. CTSI developed the first pilot program for multi-agency BMP #5 certification for MWDOK in 1998. The program is now in the second year. Many of the details, computer programming, educational materials, and learning experiences have occurred within the first program implementation. CTSI therefore is the only consultant with the background to apply this approach at the statewide level.

The CTSI project manager, Tom Ash, pioneered the use of ET and water budgets in Irvine. The result was a 54% decrease in commercial landscape water use. He is the author of a book for landscape contractors and a frequent speaker at landscape contractor functions.

B. Cooperators in the existing program include the California Landscape Contractors Association (endorsement), the funding water agencies MWDOC, MWD, and the local retail agencies and/or cities within Orange County. Property management associations, specifically the California Association of Community Managers (CACM) and the California Association Institute (CAI) are both active participants in promoting and giving access to their members in the pilot project in Orange County.

Partnerships with local/regional wholesale and retail agencies are the key to this program. These agencies need to show compliance with BMP #5. These agencies should have a motivation to participate, assist, provide water use downloads, promote and assist with identifying local contractors, etc. in order to meet the BMP and improve access to CALFED grants, bank water, etc. We have seen approximately a substantial level of agency buy-in in Orange County. This number directly relates to which agencies are CUWCC signatories.

We count on the external cooperators, such as the landscapers, to gather the relevant data for the water agencies. This is a much more cost-effective approach than having water agencies bear the burden of collecting acreage for every landscape in their service area. Property Managers are valuable resources in pushing landscapers to undertake the measurement tasks. Water agencies promotion of the program creates a high credibility factor across all groups.

All cooperators and participants receive something of value. With data collection they receive "certification". This leads to promotion and increased potential for business. With good water management performance (meeting site water budgets) the participants receive higher levels of certification. The cooperating agencies meet BMP #5, the landscapers see valuable monthly information and site owners see reduced water bills. The original program design intended to create a win-win opportunity for all participants to motivate interest in meeting the BMP. The BMP specification does not provide any type of reward nor does it assess any type of penalty for poor water management. The information gathered in this program will enable water agencies that participate to establish water budget incentive pricing structures for landscape accounts that have obvious financial motivations built in for water users. Gathering the site data is the first step to implementing such a program (incentive water pricing is also a BMP).

E. Costs and Benefits

1. Budget summary and breakdown.

ITEM		AMOUNT
Salaries:		\$93,000
Fringe Benefits (25%):	\$23,250	
Supplies:		\$48,500
Equipment:		\$10,000
Programmer:		\$25,000
Travel		\$16,000
Total Year 1		\$215,750.00
Total Year 2		same

2. Budget justification. This budget is roughly equivalent to the first year Orange County budget for the similar program. At the state level, this budget is based on 10 agencies per year participation (additional agencies would require contract change order).

Salaries:

- \$48,000 Data Management
- \$15,000 10 Presentations
- \$30,000 Part-time, Marketing and Program Development

Benefit summary and breakdown. Benefit calculation is based on 25% on \$93,000 in program salaries.

Supplies includes program workbooks, soil probes and reference materials for each participant.

Equipment includes computer screen projector and related presentation equipment

3. Assessment of costs and benefits. Landscape water accounts for a large, perhaps 50%, of total urban water use. The development of water budgets, site by site feedback and program education could reduce water use in this sector by 10% or more. A cost benefit analysis can be developed on a per agency or per meter basis as data is returned.

Sample cost benefit evaluation:

- Estimated .5 acre foot savings per acre of landscape (data returned)
- Assume 10,000 acres in program year 1
- Assume \$250/acre foot cost
- 5,000 acre feet saved = \$1.25 million in avoided water purchases

The program could potentially generate 6 times its cost in avoided water savings.